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Supplemental Table 1. Sensitivity and Specificity of Various Pathologic Features to Distinguish Pure Class V Lupus Nephritis from PLA2R+ Membranous Glomerulopathy

	Number of lupus nephritis cases with features	Number of lupus nephritis cases without features	Number of non- lupus nephritis cases with features	Number of non- lupus nephritis cases without features	Sensitivity (CI)	Specificity (CI)	Area Under the Curve (CI)	Positive likelihood ratio (CI)	Negative likelihood ratio (CI)	Positive predictive value (CI)	Negative predictive value (CI)
Features											
Dominant or co-dominant staining for IgG	54	0	51	0	1.00 (0.93 - 1.00)	0.00 (0.00 - 0.07)	0.5 (0.5-0.5)	1.00 (1.00 - 1.00)	NA	0.51 (0.41 - 0.61)	NA
≥2+ intensity staining for C1q	26	28	0	51	0.48 (0.34 - 0.62)	1.00 (0.93 - 1.00)	0.74 (0.67-0.81)	NA	0.52 (0.40 - 0.67)	1.00 (0.87 - 1.00)	0.65 (0.53 - 0.75)
Full-house staining*	28	26	4	47	0.52 (0.38 - 0.66)	0.92 (0.81 - 0.98)	0.72 (0.64-0.80)	6.61 (2.49 - 17.53)	0.52 (0.39 - 0.70)	0.88 (0.71 - 0.96)	0.64 (0.52 - 0.75)
Extraglomerular deposits**	39	15	1	50	0.72 (0.58 - 0.84)	0.98 (0.90 - 1.00)	0.85 (0.79-0.91)	36.83 (5.2 - 258.2)	0.28 (0.18 - 0.44)	0.97 (0.87 - 1.00)	0.77 (0.65 - 0.86)
Tissue ANA	7	47	0	51	0.13 (0.05 - 0.25)	1.00 (0.93 - 1.00)	0.56 (0.52-0.61)	NA	0.87 (0.79 - 0.96)	1.00 (0.59 - 1.00)	0.52 (0.42 - 0.62)
Mesangial deposits	53	1	7	44	0.98 (0.90 - 1.00)	0.86 (0.74 - 0.94)	0.92 (0.87-0.97)	7.15 (3.59 - 14.24)	0.02 (0.00 - 0.15)	0.88 (0.77 - 0.95)	0.98 (0.88 - 1.00)
Subendothelial deposits	32	22	3	48	0.59 (0.45 - 0.72)	0.94 (0.84 - 0.99)	0.77 (0.69-0.84)	10.07 (3.2 - 30.87)	0.43 (0.31 - 0.60)	0.91 (0.77 - 0.98)	0.69 (0.56 - 0.79)
Subepithelial deposits	54	0	51	0	1.00 (0.93 - 1.00)	0.00 (0.00 - 0.07)	0.5 (0.5-0.5)	1.00 (1.00 - 1.00)	NA	0.51 (0.41 - 0.61)	NA

Tubuloreticular inclusion	42	12	0	51	0.78 (0.64 - 0.88)	1.00 (0.93 - 1.00)	0.89 (0.83- 0.94)	NA	0.22 (0.13 - 0.37)	1.00 (0.92 - 1.00)	0.81 (0.69 - 0.90)
Subendothelial & subepithelial deposits	32	22	3	48	0.59 (0.45 - 0.72)	0.94 (0.84 - 0.99)	0.77 (0.69- 0.84)	10.07 (3.2 9 - 30.87)	0.43 (0.31 - 0.60)	0.91 (0.77 - 0.98)	0.69 (0.56 - 0.79)

Abbreviations: *defined as at least trace intensity staining for IgG, IgA, IgM, C1q and C3 on a scale of 0 to 3; **by immunofluorescence at least trace intensity or electron microscopy; CI – 95% confidence interval

Supplemental Table 2. Sensitivity and Specificity of Combination of Pathologic Features to Distinguish Lupus Nephritis from Non-lupus Nephritis in a Validation Cohort (N=219).

Number of Features Present*	Number of lupus nephritis cases with features	Number of lupus nephritis cases without features	Number of non-lupus nephritis cases with features	Number of non-lupus nephritis cases without features	Sensitivity (CI)	Specificity (CI)	Area Under the Curve (CI)	Positive likelihood ratio (CI)	Negative likelihood ratio (CI)	Positive predictive value (CI)	Negative predictive value (CI)
One or more	75	0	40	104	1.00 (0.95 - 1.00)	0.72 (0.64 - 0.79)	0.86 (0.82 - 0.90)	3.60 (2.77 - 4.68)	NA	0.65 (0.56 - 0.74)	1.00 (0.97 - 1.00)
Two or more	68	7	10	134	0.91 (0.82 - 0.96)	0.93 (0.88 - 0.97)	0.92 (0.88 - 0.96)	13.06 (7.1 - 23.84)	0.10 (0.05 - 0.20)	0.87 (0.78 - 0.94)	0.95 (0.90 - 0.98)
Three or more	61	14	3	141	0.81 (0.71 - 0.89)	0.98 (0.94 - 1.00)	0.90 (0.85 - 0.94)	39.04 (12.67 - 120.25)	0.19 (0.12 - 0.31)	0.95 (0.87 - 0.99)	0.91 (0.85 - 0.95)
Four or more	49	26	2	142	0.65 (0.53 - 0.76)	0.99 (0.95 - 1.00)	0.82 (0.76 - 0.87)	47.04 (11.76 - 188.12)	0.35 (0.26 - 0.48)	0.96 (0.87 - 1.00)	0.85 (0.78 - 0.90)
Five	30	45	1	143	0.40 (0.29 - 0.52)	0.99 (0.96 - 1.00)	0.70 (0.64 - 0.75)	57.60 (8.0 - 414.15)	0.60 (0.50 - 0.73)	0.97 (0.83 - 1.00)	0.76 (0.69 - 0.82)

Abbreviations: CI – 95% confidence interval; *Lupus nephritis can be distinguished from non-lupus nephritis immune complex-mediated glomerulonephritis by presence of some of the following features: (1) Intense C1q staining: defined as ≥ 2 on a scale of 0 to 3. (2) “Full-house” staining: defined as at least trace intensity staining for IgG, IgA, IgM, C1q, and C3 on a scale of 0 to 3. (3) Extraglomerular deposits (with at least trace intensity) by immunofluorescence or electron microscopy. (4) Presence of both subendothelial and subepithelial deposits by immunofluorescence or electron microscopy. (5) Tubuloreticular inclusion.

Supplementary Table 3. Sensitivity and Specificity of Combination of Pathologic Features to Distinguish Pure Class V Lupus Nephritis from PLA2R+ Membranous Glomerulopathy

Number of Features Present*	Number of lupus nephritis cases with features	Number of lupus nephritis cases without features	Number of non-lupus nephritis cases with features	Number of non-lupus nephritis cases without features	Sensitivity (CI)	Specificity (CI)	Area Under the Curve (CI)	Positive likelihood ratio (CI)	Negative likelihood ratio (CI)	Positive predictive value (CI)	Negative predictive value (CI)
One or more	51	3	7	44	0.94 (0.85 - 0.99)	0.86 (0.74 - 0.94)	0.90 (0.85-0.96)	6.88 (3.45 - 13.73)	0.06 (0.02 - 0.19)	0.88 (0.77 - 0.95)	0.94 (0.82 - 0.99)
Two or more	45	9	1	50	0.83 (0.71 - 0.92)	0.98 (0.90 - 1.00)	0.91 (0.85-0.96)	42.50 (6.0 - 297.0)	0.17 (0.09 - 0.31)	0.98 (0.88 - 1.00)	0.85 (0.73 - 0.93)
Three or more	37	17	0	51	0.69 (0.54 - 0.80)	1.00 (0.93 - 1.00)	0.84 (0.78-0.91)	NA	0.31 (0.21 - 0.47)	1.00 (0.91 - 1.00)	0.75 (0.63 - 0.85)
Four or more	24	30	0	51	0.44 (0.31 - 0.59)	1.00 (0.93 - 1.00)	0.72 (0.66-0.79)	NA	0.56 (0.44 - 0.71)	1.00 (0.86 - 1.00)	0.63 (0.52 - 0.73)
Five	10	44	0	51	0.19 (0.09 - 0.31)	1.00 (0.93 - 1.00)	0.59 (0.54-0.64)	NA	0.81 (0.72 - 0.93)	1.00 (0.69 - 1.00)	0.54 (0.43 - 0.64)

Abbreviations: CI – 95% confidence interval; *Lupus nephritis can be distinguished from non-lupus nephritis immune complex-mediated glomerulonephritis by presence of some of the following features: (1) Intense C1q staining: defined as ≥ 2 on a scale of 0 to 3. (2) “Full-house” staining: defined as at least trace intensity staining for IgG, IgA, IgM, C1q, and C3 on a scale of 0 to 3. (3) Extraglomerular deposits (with at least trace intensity) by immunofluorescence or electron microscopy. (4) Presence of both subendothelial and subepithelial deposits by immunofluorescence or electron microscopy. (5) Tubuloreticular inclusion.

Supplemental Figures:

Supplemental Figure 1:

